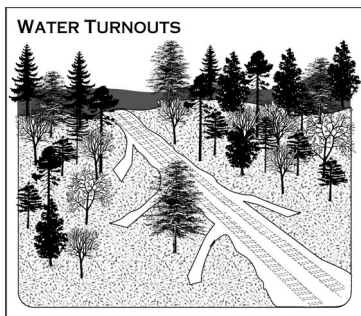


Erosion Control Measures

Wing (Lead-Off) Ditches

A lead-off ditch is a diversion ditch that is constructed to turn water away from the road and out of the side ditch into adjacent, undisturbed areas.



Lead-off ditches should:

- Intersect the roadside ditch at the same depth and be outsloped to a maximum grade of 2%.
- Not feed directly into adjacent drainages, gullies or channels.
- Be installed or cut solidly into the soil and wide enough to allow for maintenance.

Erosion Control Measures

Table 8 Maximum Distance Between Lead-Off Ditches		
	Slope (Percent)	Feet
Flat	2	250
	3	220
	4	190
	5	160
Moderate	6	144
	7	128
	8	112
	9	96
Steep	10	80
	11	60

Erosion Control Measures

On sloping roads, the lead-off ditch should leave the road ditch at a 30 to 45 degree angle to the roadbed and downsloped less than 2%.

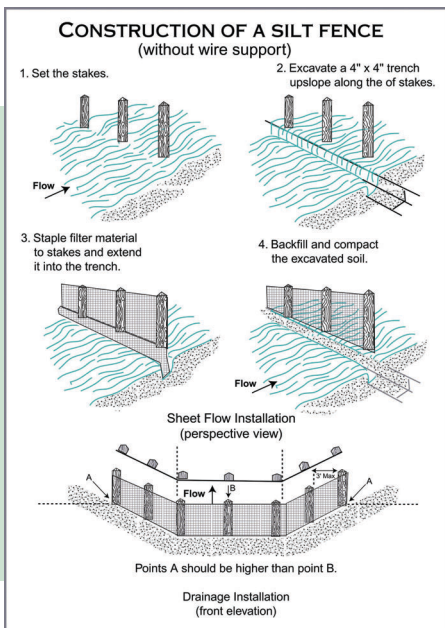
Brush Barrier



A temporary sediment barrier constructed at the perimeter of a disturbed area such as log decks adjacent to the SMZ, or skid trails in the bottom of swales. The purpose of the brush barrier is to intercept and retain sediment from disturbed areas to prevent sediment from leaving the site.

Erosion Control Measures

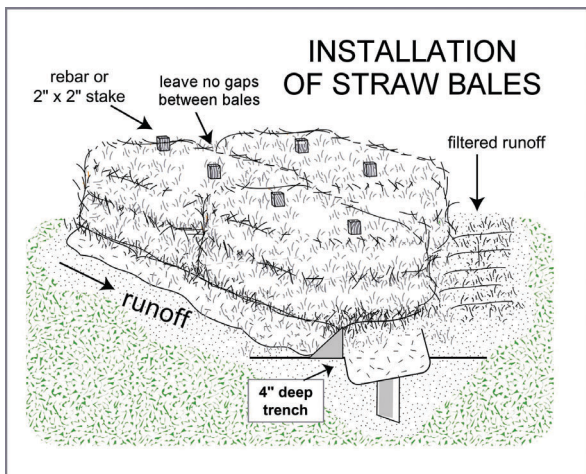
Silt Fence



A temporary sediment barrier consisting of a synthetic filter fabric stretched across and attached to supporting posts and entrenched to a depth of 4 inches.

Erosion Control Measures

Straw Bale Barrier

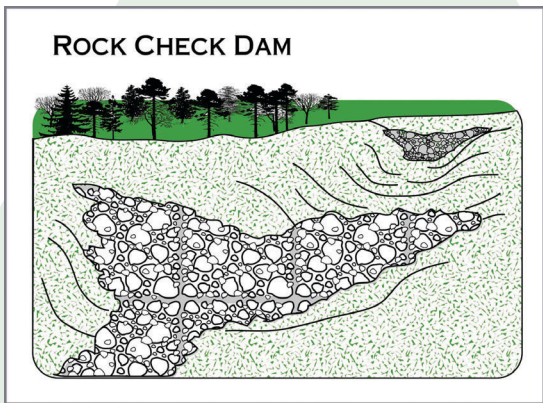


A temporary sediment barrier consisting of entrenched and anchored straw bales.

- Decreases the velocity of sheet flows.
- Intercepts small amounts of sediment from disturbed areas.

Erosion Control Measures

Rock Check Dams

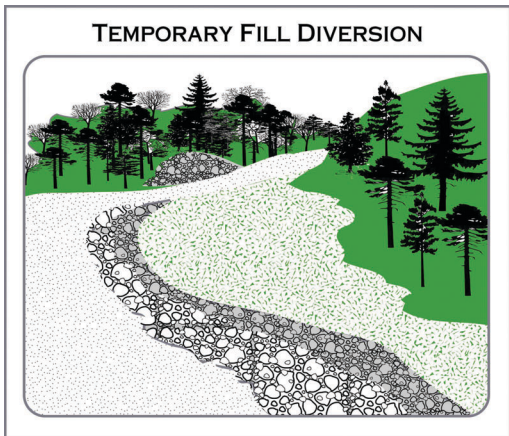


Small temporary stone dams constructed across a swale or drainage ditch.

- Effective in reducing the velocity of water moving in a drainage ditch, thereby reducing the erosive potential of the water in the ditch.
- An aid in sediment trapping for forestry operations.

Erosion Control Measures

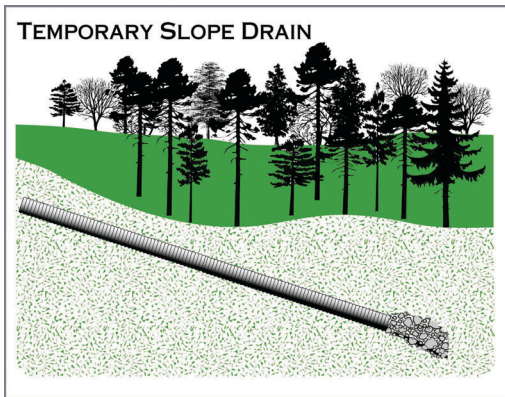
Temporary Fill Diversion



Usually found along the edge of a road where an “active fill” is present directly below the road edge. This diversion will keep drainage from the road surface from crossing the exposed fill and eroding it down-slope. Generally, the water from such a fill diversion is directed to a temporary slope drain, or a vegetated or rock-lined ditch.

Erosion Control Measures

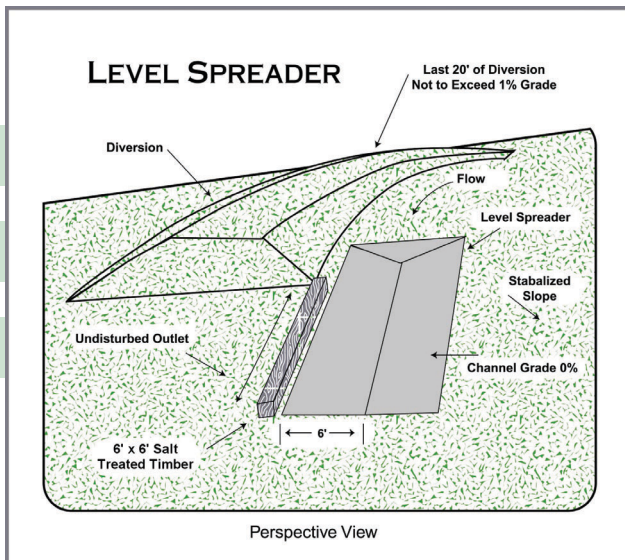
Temporary Slope Drain



A flexible tubing or conduit used to direct water from a road surface to the bottom of a fill slope. This will prevent erosion of the fill slope. This will also allow for the stabilization with vegetation of the fill slope.

Erosion Control Measures

Level Spreader



An outlet for drainage structures and diversions consisting of an excavated depression constructed at zero grade across a slope.

Erosion Control Measures

The level spreader will release directed flow from a drainage structure, such as a lead-off ditch, to a zero grade and release it into the undisturbed forest area as sheet flow.

The following additional BMP measures can be found in the full manual, *Virginia's Forestry Best Management Practices for Water Quality, Fourth Edition, July 2002*:

- Sediment Traps
- Geoweb® improved stream crossings
- Geotextile
- Mulching
- Erosion Control Blankets
- Surface Roughening